REMARKS

Careful consideration has been given by the applicant to the Examiner's comments and rejection of the claims, as set forth in the outstanding Office Action, and favorable reconsideration and allowance of the application, as amended, is earnestly solicited.

Applicant notes the Examiner's rejection of Claim 18, the only claim directed at the guide block structure, per se, as being anticipated under 35 U.S.C. §102(b) by Jepsen, et al, U.S. Patent No. 5,947,003, of record, as detailed in the Office Action.

Furthermore, applicant notes the rejection of Claims 1-18 under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA), essentially represented by Applicant's own earlier German Publication No. DE 196 017 21 A1 in view of Jepsen, et al. and further in view of Gnanamuthu, U.S. Patent No. 4,401,726, as detailed in the Office Action.

However, upon careful consideration of the art, applicant respectfully submits that irrespective as to whether the cited publications are considered singly or in combination, the present invention, as claimed, clearly and patentably distinguishes thereover.

Reverting to the rejection of Claim 18 under 35 U.S.C. §102(b), as being anticipated by Jepsen, et al., applicant notes that notwithstanding the Examiner's comments, that particular claim structure of a guide block for a hydrostatic piston machine distinguishes over the art due to the presence of the at least one slide plane having the lands arranged thereon as elevations,

However, in order to more clearly distinguish over the art, wherein the lands, which are formed as elevations formed by local fusion of a supplied material through the intermediary of a non-contact heat input, the elevations forming the lands having apertures formed therein, responsive to a brief switching off or reduction in the power of the non-contact heat input corresponding sites of the lands.

This enables the formation of the apertures for the oil passages, as clearly described on Page 10, Lines 13-19 of the specification and which in no manner can be ascertained in Jepsen, et al., nor any other references of record.

Consequently, Claim 18 is neither anticipated nor rendered obvious in view of the prior art.

Concerning the foregoing, applicant also notes that Claim 1 has been further amended to indicate that the heat input relative to a guide block blank is effected along paths so as to produce a pattern of the lands, with the pattern of the lands having apertures formed therein upon the heat input being briefly switched off or reduced corresponding sites of the lands. This, in essence, produces the oil apertures 30 and 31 in the lands, as described in the present specification, particularly with regard to Figure 3 on Page 10, lines 13-19, and also in parts inherent operating advantages to the present structure not at all evident nor even suggested in the art, irrespective as to whether the latter is considered singly or in combination.

Reverting to the art in more specific detail in traverse of the application thereof to the presently presented amended claims, applicant submits as follows:

Reverting to Jepsen, et al., U.S. Patent No. 5,947,003 and having specific reference to the first page of the disclosure thereof and the first embodiment represented in Figure 1 of the drawings, there is provided a piston 4, which is equipped with a plastic layer 11 in order to reduce the amount of friction encountered by that surface. The plastic layer, in essence, abuts and rubs against between a cylinder 3 and piston 4, and in the instance of any piston seizure, as described in Column 2, line 25, sandwiches therebetween. Moreover, according to Column 4, line 64, there is stated the presence of a virtually seam-free sheathing so as to provide for a pressure sealing action. The plastic layer 11 is also incorporated into through-bore 14 within the

piston, whereby this provides an application without any lubrication property media, such as water, as mentioned in Column 2, line 29 of Jepsen, et al. Consequently, providing a coating with plastic through injection molding is limited and fails to provide advantages in any lengthy service light with any satisfactory operational characteristics, as described in Column 2, line 30, being somewhat problematic, inasmuch as water can also become only reactive when driven in a supercritical state, such as 374°C, 218 ATM.

Moreover, in Jepsen, et al., the concept and method of surface preparation and matching, in effect, to some extent, etching, is absent therein wherein any surface treatment, contrary to any arguments pertaining to leveling surface features, may be considered essentially unimportant in Jepsen, et al., although two separate layers are in existence. In effect, beyond the material-pairing, as described in Column 2, lines 49, it must be considered that in Jepsen, et al. the floors are operating or interacting within functional surfaces of the machine, and consequently, Jepsen, et al., although being the closest reference of record, is only peripherally applicable to the present invention and is not at all disclosed nor anticipatory of the present claims, as amended herein.

Moreover, remote from the cylinder 3 and piston 4, the interface region between the slide shoe 6 and the swash plate 5 in Jepsen, et al. only discloses an absence of any additional layer on a slide face. From the slide shoe 6, there can only be ascertained two confining domes, which act as sealing lands and the annular recess face therebetween is filled with pressurized oil for a conventional reduction in friction. Consequently, there is not suggestion that one of skill in the art will assume any treatment and method pursuant to the present invention, whereby in Jepsen, et al., the surface of the swash plate 5 is only conventionally machined to a typically rough depth by removing material.

Moreover, in Jepsen, et al., the second embodiment, as described in Figure 2, illustrates that the swash plate 5 is enclosed with a surrounding plastic layer, as can also be ascertained from Figure 1 of that publication. However, the swash plate 5 raises a question as to why code faces, which do not provide any functional use in terms of budding friction encountered surfaces and any low transmission. Consequently, Jepsen, et al. does nothing involving the problems as set forth and treated in the present invention in reducing the wear of functional or cooperating surfaces.

Even considering any teaching that is missing to "insert" a plastic layer and an interface region set forth by the Examiner, the present invention is still directed to an entirely different problem, which is concerned with more than providing an insert-like interleaving a plastic washer, and a solution remains different from just employing a molten plastic material.

To the contrary, the present invention is directed to solving a problem of more than simply increasing a layer or applying thereto by an additive and synthesis in forming defined functional geometries for coupling and matching heavy mechanical loads, which are encountered in a highly selective and dedicated mode.

Pertaining to the present invention, as set forth in amended Claim 1 and as also described in the previously filed response, the present invention focuses on an actual method of utilizing an additive synthesis for forming advantageous geometries with superior material properties in producing the slide plane of a guide block blank, particularly, as employed by a hydrostatic piston machine. This advantageous treatment of the guide block slide plane of the hydrostatic piston machine teaches an entire new higher order of magnitude in providing an extended service life expectancy, in contrast with Jepsen, et al., predicated on the treatment whereby there are

included the unique detailed features of supplying the type of material effectuating localized fusion forming suitable geometric shapes in an advantageous mode.

According to Figure 4 of the drawings and the description thereof, a feed device 36, which incorporates a nozzle 37, a contouring scraper 38 and a common arm for supplying a powder, as referred to in the specification on Page 9, third paragraph, provides a unique arrangement. Hereby, non-contacting local heating is applied to the powder effecting sintering and a robot using a face structure, which to some extent resembles a form of laser beam coating. The aforementioned interaction of the components offers an already novel aspect.

Hereby, even considering the Examiner's previous consideration of the Japanese Publication JP 58090585 A, it is doubtful as to whether aluminum alloys in the form of putties are applicable to a comparison with plastic or ceramics in a manner that is suitable to the present invention. At least some aspects of the teaching of surface preparation, prior to actual application of the layer, is lacking in the Japanese publication for an easy and successful coating, and moreover, it is also different from applying a galvanic process, such as utilized in liquid solutions or melting powders applied by high-voltages, when using granular compounds, as predicated in the disclosure in Table 1 of Le Caer, et al., U.S. Patent No. 4,595,429, having mixtures of 60-85% aluminum.

Moreover, it is also questionable as to how the constituents can bring such a coating to melt beyond simply irradiating applying the coating on a slide face or forming to homogeneous layers in controlling their characteristics at interface or budding a second portion or part.

The prior art describes coating of one surface only, and there is no disclosure of any issue in terms of friction upon the interaction between two surfaces. Again, there is a difference with regard to a reflow process and when soldering glued electronic members to a printed circuit

board or making contact pads for the latter push buttons utilizing a graphatizced layer, as in the Japanese publication. Moreover, the Japanese publication also describes a laser, a plasma and an electron beam for coating the surface, in effect, to form a layer with a mixed powder comprising a configuration of coal. It can be readily excluded that a graphite layer may be used on a slide face 22 of the guide block blank 47 in Figure 4 of the present invention, except for the possible hardening in case of steal and with an increased brittleness in fissures. Consequently, the foregoing secondary publics tons are not at all applicable to the present invention.

As also described with regard to the new features introduced into, respectively, Claims 1 and 18, concerning the formation of the apertures in the lands, by switching the laser off or sharply reducing its power, as set forth on Page 10, lines 13-19 during the forming process, (even when employing microwave, plasma, iron electron beams or even a scale of field having evanescent modes without radiation), this means that modulation is possible, which enables shaping the form or, in effect, producing geometrical three-dimensional structures, forming contours or apertures in the lands. Moreover, the shape can also be tuned, in effect, by tuning the melt, possibly again with some aspects provided for harmonized, in effect, homogenized crystal structures.

The foregoing publications are completely devoid of any suggestion or disclose that provides for the manufacture of the three-dimensionally shaped objects by means of simple beams or heat input through different intensities, in effect, full power, and either shut off or reduced power levels to provide the apertures or contours.

Thus, by applying heat input, or beam radiating in a controlled manner, in effect, switching on and off during manufacture or providing for reduction in power, which can also be implemented by varying pulse widths, or modulated by a triangular wave of low frequency

oscillators. Different types of heat inputs can be employed, for example, digital to analog conversion using a laser beam and optical system 34, whereby an optical transmission pad warms the signal reconstruction low pass for a one-to-one imaging under sampling theorem and aperture effects. Consequently, the various heat input characteristics, as described and claimed herein, enables suitable characteristics to be imparted to the lands possessing certain material properties so as to enable selective contouring of the surfaces in an advantageous mode. This can be clearly ascertained in Figure 3 of the drawings between the sealing lands and the bearing lands, which implies different material and surface interface characteristics that are specific to the function and application of the respective land.

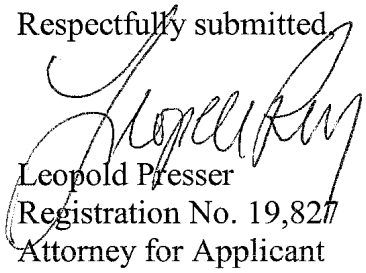
Consequently, the leveling or even polishing of the lands to a desired wavelength roughness can be readily informed by modulating in the simplest instance as clocking a beam during melting.

The foregoing does not in any manner present itself in the disclosure of Gnanamuthu, U.S. Patent No. 4,401,726, which provides for the surface modification of particular low melting substrate materials. However, that particular patent is in no manner concerned with a guide block surface and structure analogous to that set forth and claimed herein in accordance with the inventive concept.

In summation, none of the reference of record, whether considered singly or in combination, even remotely anticipate nor suggest the present invention, and the claims are deemed to be clearly in condition for allowance, in view of which the early issuance of the Notice of Allowance by the Examiner is earnestly solicited.

However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicant's attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,



Leopold Presser
Registration No. 19,827
Attorney for Applicant

SCULLY, SCOTT, MURPHY & PRESSER, P.C.
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343

LP:jy